REMARKS/ARGUMENTS

Claim 1, 2, 4-6, 8, 9, and 11-13 are pending in this application. By this Reply, claims 1, 5, 6, and 9 are amended and new claims 12-13 are added. Reconsideration and withdrawal of the rejections are respectfully requested in view of the foregoing amendments and following remarks.

The drawings stand objected to under 37 C.F.R. § 1.83(a) for allegedly failing to show all of the claimed features. New Figures 3 and 4 have been added, and illustrate the features of the claims. It is believed that no new matter has been added, as the contents of the newly added figures correspond to the recitation in the claims.

Claim 6 stands objected to based on an informality. Claim 6 has been amended and is believed to comply with the requirements of the Patent Office. Withdrawal of this objection is respectfully requested.

Claims 9 and 11 stand rejected under 35 U.S.C. § 103(a) over Fillot (U.S. Patent No. 4,317,010). See Office Action, paragraph 3. Claim 11 alternatively stands rejected over Fillot, in view of Okubo et al. (U.S. Patent number of 5,689,355) (hereinafter Okubo). See Office Action, paragraph 4. These rejections are respectfully traversed.

The asserted references and combination of references respectively fail to establish a prima facie case of obviousness, as required by Section 103. For example, Fillot relates to a remote monitoring system that individually locates pairs of intermediate amplification circuits in a remote location for a transmission line between a monitored station and a monitoring station. In discussing the background of the related art, Fillot teaches that local automatic gain regulation is

required to correct attenuation of data caused by sections of a transmission line. See column 3, lines 25-27.

Specifically, an intermediate amplification circuit is designed with a negative feedback loop. The gain of the intermediate amplification circuit can thus the modified automatically using the negative feedback of a pilot signal, which is transmitted continuously in the line. Fillot further teaches that a gain regulating circuit includes a bandpass filter that samples the pilot signal at the output of the intermediate amplification circuit (to obtain the feedback signal). The pilot signal is then amplified and rectified, and subsequently compared with a reference voltage. Based on a difference resulting from this comparison, the gain of the intermediate amplification circuit can be corrected. See column 3, lines 46-52. Accordingly, the already amplified output pilot signal is compared to a reference value. Hence, the gain adjustment is taught to be performed using negative feedback.

Additionally, as Fillot teaches, the pilot signal is transmitted continuously on the line, and is used for the comparison to the reference value. There is no teaching or suggestion of mixing the pilot signal with any other signal being transmitted. Consequently, there is no teaching of correcting an amplification for a particular transmission of data, such that individual variations and degradation can be corrected. Moreover, to the extent that the Patent Office asserts that the pilot signal is a combined signal, there is no teaching or suggestion of dividing the pilot signal into component parts, and using one component part to determine a necessary gain correction.

Moreover, there is no teaching or suggestion in Fillot that the pilot signal at the output of the amplification circuit is locally generated. Rather, as discussed above, the Fillot pilot signal is described only as being "transmitted continuously in the line." Additionally, there is no teaching that the level of the pilot signal is a known value. Accordingly, the entire comparison operation is neither taught nor suggested.

According to one aspect of the preferred embodiment, on the other hand, an RF signal is combined with a locally generated modulated signal at a repeater. The modulated signal is of a prescribed level. The mixed signal is then transmitted through an optical cable to a slave repeater, where it is detected. The slave repeater separates the detected mixed signal into the component parts, and preferably compares the received modulated signal with a reference value, which is preferably related to the prescribed level of the locally generated modulated signal. Using this comparison, the transmission degradation over the optical line can be ascertained. Accordingly, the RF signal can be compensated. Moreover, as recited in the claims, the monitoring signal is not necessarily continuously transmitted; rather, it is transmitted with an RF signal that is to be compensated. Accordingly, the degradation of a particular transmission can be ascertained.

Accordingly, Fillot fails to teach or suggest at least combining a locally generated monitoring signal of a prescribed level with an RF signal. Fillot further fails to teach or suggest receiving and separating the transmitted monitoring signal from the transmitted RF signal at a slave repeater. Additionally, Fillot fails to teach or suggest comparing, at the slave repeater, the level of the received monitoring signal with the prescribed level. Consequently, because Fillot fails

to teach or suggest all of the claimed features, a prima facie case of obviousness cannot be made. Withdrawal of this rejection is thus respectfully requested.

Claims 1, 2, 5, and 6 stand rejected under 35 U.S.C. § 103(a) over Fillot in view of Okubo. This rejection is respectfully traversed.

The asserted combination of references fails to establish a prima facie case of obviousness, as required by Section 103. For example, the asserted combination of references fails to teach or suggest at least mixing from a master repeater a locally generated modulated MODEM signal of a prescribed level with a RF signal and transmitting the mixed signal through an optical cable, detecting at a slave repeater a modulated MODEM signal level from the mixed signal transmitted by the master repeater, comparing, at the slave repeater, the detected modulated MODEM signal level with a reference level and obtaining a difference between the levels, wherein the reference level is the prescribed level unless the master repeater transmits a control signal of a base station; and adjusting a gain of an amplifier for the RF signal in the slave repeater by using the obtained difference to calculate the gain adjustment, as recited in claim 1.

Moreover, the asserted combination of references fails to teach or suggest at least receiving from a base station a first RF signal, amplifying the first RF signal by a constant level through an amplifier of a master repeater, mixing a locally generated first modulated MODEM signal of a prescribed level with the first amplified RF signal and transmitting the mixed signal through an optical cable to a slave repeater, receiving and separating the mixed signal into a second modulated MODEM signal and a second RF signal, and detecting a modulated MODEM signal

level from the second modulated MODEM signal, comparing, at the slave repeater, the modulated MODEM signal level with a reference level and obtaining a difference between the levels, wherein the reference level is the prescribed level unless the master repeater transmits a control signal of the base station, controlling a gain of an amplifier for the RF signal in the slave repeater based upon said obtained difference, and amplifying the second RF signal according to the controlled gain and transmitting the second amplified RF signal to terminal, as recited in claim 5.

Fillot is discussed above, and fails to teach or suggest all of the claimed features. Okubo, either alone or in combination with Fillot, also fails to teach or suggest all of the claimed features, and specifically fails to teach or suggest those features that are neither taught nor suggested by Fillot.

Okubo is directed to a repeater system in which an RF signal sent to a slave device is detected and compared to a stored reference value. The difference between the detected RF signal and the stored reference value is used to retrieve a gain correcting value from memory. The retrieved gain correcting value is used to adjust a gain of a variable gain amplifier.

With respect to gain control taught by Okubo, Okubo teaches that a predetermined gain correcting value is prestored. Accordingly, Okubo teaches that the loss in the optical cable is estimated using the gain correcting value. Accordingly, there is no measurement of actual loss from which the correction is calculated. That is, the received signal is not compared to the actual transmitted signal. Rather, it is compared to a prestored value that approximates the transmitted

value. See column 6, lines 52-54. Moreover, this aspect of Okubo is admitted by the Patent Office. See Office Action dated September 17, 2002, page 2, numbered paragraph 3.

Thus, Okubo teaches that a reference value is determined based on a DC current value when the length of the optical cable is 0 m. Using this value, an estimate is taken as to signal loss during transmission of a different signal. Specifically, a current value of a transmitted input signal is detected. The loss of the optical cable is then estimated using the predetermined reference value, which is the known DC current value. Accordingly, the estimate is not based upon an actual transmission level of the received signal. Rather, it is based upon a pre-calibrated value. Moreover, the DC current value and the gain correcting value are prestored in the control circuit upon its calibration. See column 6, lines 56-59. Moreover, the loss determined by Okubo is based upon a measurement of the signal to be corrected and not upon a second signal transmitted with the signal to be corrected.

Additionally, the Patent Office admits that Okubo does not teach mixing a modulated modem signal of a predetermined level with the RF signal in the master repeater, detecting a modulated modem signal in the slave repeater, and comparing its level in the slave repeater with said predetermined level to obtain the difference.

Accordingly, the asserted combination of references fails to teach or suggest all of the features of independent claims 1 and 5. Claim 3 depends from claim 1 and claim 7 depends from claim 5, and are allowable for at least the reasons discussed above. It is therefore respectfully requested that this rejection be withdrawn.

Claims 4 and 8 stand rejected under 35 U.S.C. § 103(a) over Fillot in view of Okubo, and further in view of Kobayashi et al. (U.S. patent number 4,607,656) (hereinafter Kobayashi). This rejection is respectfully traversed.

The asserted combination of references fails to establish a prima facie case of obviousness, as required by Section 103. For example, claim 4 depends from claim 1 and claim 8 depends from 5. Claims 1 and 5 are discussed above with respect to the combination of Fillot and Okubo. As discussed above, the combination of Okubo and Fillot fails to teach or suggest all of the claimed features.

Moreover, Kobayashi, either alone or in combination with Fillot and Okubo, fails to teach or suggest all of the claimed features. For example, Kobayashi relates to information transmission system having processors coupled by respective modems to a communication medium. Kobayashi, however, fails to teach or suggest the features that are neither taught nor suggested by the combination of Okubo and Fillot. Moreover, the Patent Office does not appear to rely upon Kobayashi to teach these features.

For example, Kobayashi teaches that a level of attenuation of a reception line is calculated, and that this value is assumed to be the attenuation level of a transmission line. A gain of the transmitting amplifier is accordingly adjusted based on the attenuation of the reception line. See column 5, lines 31-49. Consequently, Kobayashi, either alone or in combination with Okubo and Fillot, fails to teach or suggest all the claimed features. Accordingly, a prima facie case of obviousness cannot be made, and it is respectfully requested that this rejection be withdrawn.

New claims 12 and 13 have been added, and are believed to be in condition for allowance for at least the reasons discussed above. Prompt examination and allowance in due course are earnestly solicited.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **Anthony H. Nourse**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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